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(54) STEEL SHEET FOR INDUCTION HARDENING EXCELLENT IN TOUGHNESS IN HARDENED PART, INDUCTION HARDENING STRENGTHENED MEMBER AND PRODUCTION THEREOF

(57)Abstract:

PROBLEM TO BE SOLVED: To produce a steel sheet for induction hardening excellent in hardenability, in which the hardened part is provided with toughness and which is excellent in impact absorbing characteristics, to produce an induction hardening strengthened member and to provide methods for producing them.

SOLUTION: This steel sheet for induction hardening contains, by mass, 0.05 to 0.20% C, 0.3 to 2.5% Mn, $\leq 0.02\%$ P, $\leq 0.02\%$ S, $\leq 0.06\%$ Al, $\leq 0.015\%$ Ti, $\leq 0.010\%$ N, 0.0005 to 0.0040% B, and the balance Fe with inevitable impurities. In addition to the fundamental components, as elements for moreover improving the characteristics of the steel sheet, one or more kinds among Si, Cr, Mo, V, W, Cu and Ni can be incorporated respectively by $\leq 1.0\%$. The steel sheet for induction hardening is formed to a prescribed shape, and, after that, the part to be imparted with improved strength is subjected to induction hardening, by which an induction hardening strengthened member can be obtd. The old austenite grain size in the hardened part is preferably controlled to $\leq 20\ \mu\text{m}$.